

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: PEUKER, MARC
Application No.: 10/568248 Confirmation No.: 9692
Filed: 13-AUG-2004 Group Art Unit 3732
Title: UNIT-DOSE SYRINGE FOR A MULTI-COMPONENT MATERIAL

BRIEF ON APPEAL

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May 27, 2010 /Tracey L. Riley/
Date Signed by: Tracey L. Riley

Dear Sir:

This is an appeal from the Office Action mailed on February 26, 2010, finally rejecting claims 51 through 64, 82 through 84, and 89.

Fees

- ☐ Any required fee under 37 CFR § 41.20(b)(2) will be made at the time of submission via EFS-Web. In the event fees are not or cannot be paid at the time of EFS-Web submission, please charge any fees under 37 CFR § 1.17 which may be required to Deposit Account No. 13-3723.
- ☐ Please charge any fees under 37 CFR §§ 37 CFR § 41.20(b)(2) and 1.17 which may be required to Deposit Account No. 13-3723.
- ☒ Please charge any additional fees associated with the prosecution of this application to Deposit Account No. 13-3723. This authorization includes the fee for any necessary extension of time under 37 CFR § 1.136(a). To the extent any such extension should become necessary, it is hereby requested.
- ☒ Please credit any overpayment to the same deposit account.

A Notice of Appeal in this application was filed on May 25, 2010, and was received in the USPTO on May 25, 2010.

Appellants request the opportunity for a personal appearance before the Board of Appeals to argue the issues of this appeal. The fee for the personal appearance will be timely paid upon receipt of the Examiner's Answer.

REAL PARTY IN INTEREST

The real party in interest is 3M Company (formerly known as Minnesota Mining and Manufacturing Company) of St. Paul, Minnesota and its affiliate 3M Innovative Properties Company of St. Paul, Minnesota.

RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any related appeals or interferences.

STATUS OF CLAIMS

Claims 51 through 89 are pending in the application. Claims 65 through 81 and 85 through 88 are withdrawn. Claims 51 through 64, 82 through 84, and 89 stand finally rejected and they all are the subject of this appeal.

STATUS OF AMENDMENTS

No amendments have been filed after the final rejection.

SUMMARY OF CLAIMED SUBJECT MATTER

The claims at issue concern a syringe 100 for a multi-component material. U.S. Patent Application Publication 2007/0166660 A1 at paragraph 69; Fig. 1 (all references to the present application are to this publication; references are exemplary, not exhaustive). The syringe includes a cartridge 101 having a front end and a rear end, and having a compartment 105, 106 for each component, a static mixer 112 connectable with the cartridge 101 at its front end, a mixing tip 102 integrally formed as one part with the cartridge 101 at the front end of said cartridge and receiving the static mixer, and a plunger 103. Paragraphs 69, 70; Figures 1, 2, 3, and 4. The plunger 103 is located, in the inactivated state of the syringe, at the rear end of the cartridge 101. Paragraph 72, Figures 1 and 6. The plunger 103 is moveable towards the front end of the cartridge 101 for dispensing material from the cartridge through the mixing tip 102. Paragraph 72; Figure 6.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

First Ground of Rejection

Claims 51, 53, 54, 82 through 84, and 89 stand rejected under 35 USC § 102(b), as anticipated by U.S. Patent No. 5,743,436 (Wilcox et al.) or, in the alternative, under 35 U.S.C. 103(a) as obvious over Wilcox et al. in view of U.S. Patent No. 6,048,201 (Zwingenberger).

Second Ground of Rejection

Claims 52 through 55 stand rejected under 35 USC § 103(a) as purportedly unpatentable over the combined teachings of U.S. Patent No. 5,743,436 (Wilcox et al.) or Wilcox et al. in view of U.S. Patent No. 6,048,201 (Zwingenberger), and further in view of U.S. Patent Publ. No. 2004/0262332A1 (Pauser et al.).

Third Ground of Rejection

Claims 56 through 64 stand rejected under 35 USC § 103(a) as purportedly unpatentable over the combined teachings of U.S. Patent No. 5,743,436 (Wilcox et al.) or Wilcox et al. in view of U.S. Patent No. 6,048,201 (Zwingenberger), and further in view of U.S. Patent Publ. No. 2004/0262332A1 (Pauser et al.) as applied to claim 55, and further in view of U.S. Patent No. 6,572,031 (Hunter et al.).

ARGUMENT

I. **First Ground of Rejection: Claims 51, 53, 54, 82 through 84, and 89**

In the Office Action from which this appeal is taken, the Examiner rejected claims 51, 53, 54, 82 through 84, and 89 under 35 U.S.C. 102(b) as anticipated by U.S. Patent No. 5,743,436 (Wilcox et al.), or in the alternative under 35 U.S.C. 103(a) as being obvious over Wilcox et al. in view of U.S. Patent No. 6,048,201 (Zwingenberger). Regarding claim 51, the Examiner indicated that Wilcox et al. discloses the features recited in that claim, and with respect to the term “a mixing tip integrally formed as one part with the cartridge” the Examiner

stated that the word “integral” is defined as “consisting or composed of parts that together constitute a whole”, and that the use of an adhesive or a welding process in Wilcox et al. makes the components adhered or welded together “integral” within the meaning of that claim. If Wilcox et al. fails to disclose that the mixing tip is integrally formed as one part with the cartridge, the Examiner continued, then “such one piece construction would have been merely a matter of obvious engineering choice that is well within the skill of an artisan.” Office Action at page 3. Apparently as an alternative basis for rejection, the Office Action stated that Zwingenberger discloses a syringe comprising a mixing tip, head piece, and cartridge “being integrally formed as one part,” and that it would have been obvious to one having ordinary skill in the art to have modified Wilcox et al. by making the mixing tip and the cartridge an integral unit so that it can be inserted into and removed from the syringe as taught by Zwingenberger. Office Action at pages 3-4. Applicant respectfully disagrees for at least the following reason.

The issue on appeal is a straightforward one. The applicants claim in claim 51 a device in which a mixing tip is “integrally formed” as one part with the cartridge. In other words, a mixing tip and cartridge are formed or created together, for example by injection-molding, and not formed or created separately and subsequently glued or welded together. None of the devices in the applied prior art discloses this feature among others, and in fact the feature cannot be said to be obvious because it simply cannot be done to the prior art devices. These points are explained in detail below.

Wilcox discloses an applicator for dispensing material from a dual-chambered cartridge, according to its title. It includes a housing 52 that includes an exit conduit 54 having an internal passageway. Wilcox et al. at col. 5, lines 14-16. Wilcox et al. goes on to state that:

[o]ptionally, the cartridge 12 is assembled by inserting the static mixer 56 in the exit conduit 54, and then connecting the barrels to the housing 52 by an adhesive, a welding process or other joining means. As another option, the barrels, the housing 52 and the static mixer 56 are made as two integral molded half sections that are joined together subsequent to molding.

Col. 5, lines 45-51. Clearly these parts are not “integrally formed,” because if they were, there would be no need to discuss how to assemble them after they have been formed. As a result, Wilcox et al. does not disclose a device with a cartridge that is integrally formed with a mixing tip, and cannot anticipate independent claim 51.

Wilcox et al. also cannot render the claimed invention obvious, because there appears to be no way that such a device could have the relevant components “integrally formed” with each other. For example, the tip of the dispenser in Wilcox et al. is curved at its front end, and at the rear end it is blocked by a separation wall, so the core that would be used when molding such a component could not be removed from the passageway in either direction. If that molding core cannot be removed, then the device cannot function. Thus it is clear that the device of Wilcox et al. not only does not disclose a cartridge and a mixing tip that are integrally formed, it cannot suggest it because of its design. Wilcox et al. therefore cannot render obvious the invention of claim 51.

The secondary reference, Zwingenberger, also does not disclose a mixing tip “integrally formed” in one piece with a cartridge, and thus does not negate the patentability of claim 51 either by itself or taken together with Wilcox et al. Even if one assumes that the “film tubes” of Zwingenberger are “cartridges” within the meaning of claim 51 (a point that Applicants do not concede), those tubes are separately formed and then subsequently “glued, welded or the like” to a separate headpiece by rings 50. Col. 5, lines 30-36. That is not the claimed invention.

Zwingenberger also cannot be said to render the claimed invention obvious, because there is no realistic way that the device of Zwingenberger could have film tubes and a headpiece that are integrally formed, as required in claim 51. No molding device or other manufacturing system or process known to Applicants’ representative would prevent material from flowing into all of the various gaps and openings in the Zwingenberger device, and if one could, the resulting dispenser device could not be released from the mold. Thus while it may be convenient to say that the device of Zwingenberger discloses a device with cartridges that are integrally formed

with a mixing tip, or that such a teaching is obvious from the reference, it is neither accurate nor possible.

Finally, because both references applied in the Office Action relative to independent claim 51 share the same deficiencies, as described in detail above, there is no combination of the two references that would render obvious the invention of that claim. And because claim 51 is allowable over the prior art of record, the claims that depend from claim 51 are similarly in condition for allowance. Reversal of the final rejection of claims 51, 53, 54, 82 through 84, and 89 is therefore respectfully requested.

II. Second Ground of Rejection: Claims 52 through 55

Claims 52 through 55 stand rejected under 35 USC § 103(a) as purportedly unpatentable over Wilcox et al., or Wilcox et al. in view of Zwingenberger, and further in view of U.S. Patent Publ. No. 2004/0262332A1 (Pauser et al.). Claims 52 through 55 are patentable over Wilcox et al. and Zwingenberger (either individually or taken together) for the reasons explained in Section I above because they depend from allowable independent claim 51. There is no suggestion or reason to combine the disclosures of Wilcox et al. and Zwingenberger with a third reference as proposed in the Office Action other than that provided by the Applicants in the present application, and accordingly the combination rejection is believed to be improper and should be reversed.

Furthermore, Pauser et al. does not disclose or suggest the subject matter that is missing from the two primary references, and therefore claims 52 through 55 are patentable over the combination of the two primary references in view of Pauser et al. Specifically, none of these three references discloses or suggests a device in which the cartridges and the mixing tip are integrally formed, among other reasons. Reversal of the final rejection of claims 52 through 55 is therefore respectfully requested.

III. Third Ground of Rejection: Claims 56 through 64

Claims 56 through 64 stand rejected under 35 USC § 103(a) as purportedly unpatentable over Wilcox et al. or Wilcox et al. in view of Zwingenberger, and further in view of Pauser et al. as applied to claim 55, and further in view of U.S. Patent No. 6,572,031 (Hunter et al.). Claims 56 through 64 are patentable over the first three of these references for the reasons set forth in Sections I and II above with respect to claims 51 through 55. Furthermore, there is no suggestion or reason to combine the disclosures of Wilcox et al. and Zwingenberger and Pauser et al. with yet another reference, and the further combination rejection is believed to be improper and should be reversed.

Even if determined to be properly a part of a combination rejection, Hunter et al. does not disclose or suggest the subject matter that is missing from the other three references proposed in the rejection of claims 56 through 64. Specifically, none of these four references discloses or suggests a device in which the cartridges and the mixing tip are integrally formed, among other reasons. Reversal of the final rejection of claims 56 through 64 is therefore respectfully requested.

CONCLUSION

For at least the foregoing reasons, appellants respectfully request that the Board reverse the final rejection of all claims. If any additional formal matters remain to be resolved, Applicants will address those upon return of the file to the Examiner following the appeal.

Respectfully submitted,

May 25, 2010

Date

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CLAIMS APPENDIX

1 – 50. (Canceled).

51. (Previously Presented) Unit-dose syringe for a multi-component material, comprising: a cartridge having a front end and a rear end, and having a compartment for each component, a static mixer connectable with said cartridge at its front end, a mixing tip integrally formed as one part with the cartridge at said front end of said cartridge and receiving said static mixer and a plunger being located in the inactivated state of the syringe, at said rear end of said cartridge, and moveable towards the front end of said cartridge for dispensing material from said cartridge through said mixing tip.

Claim 52. (Previously Presented) The syringe of claim 51, wherein said static mixer comprises closure plugs at its rear end for closing outlet openings of each compartment of said cartridge.

Claim 53. (Previously Presented) The syringe of claim 51 or 52, wherein said static mixer comprises a mixing helix.

Claim 54. (Previously Presented) The syringe of claim 53, wherein said static mixer comprises an outlet tip at the front end of said mixing helix.

Claim 55. (Previously Presented) The syringe of claim 54, wherein said static mixer is collapsible.

Claim 56. (Previously Presented) The syringe of claim 55, wherein said outlet tip of said static mixer projects from the front end of said mixing tip when said static mixer is received in said mixing tip.

Claim 57. (Previously Presented) The syringe of claim 56, wherein said outlet tip of said static mixer is accommodated within said mixing tip during storage of said syringe.

Claim 58. (Previously Presented) The syringe of claim 57, wherein said front end of said mixing tip and said outlet tip of said static mixer comprise corresponding retainers that allow said outlet tip to project beyond said front end of said mixing tip upon activation of said syringe but prevent that said outlet tip completely extends beyond said mixing tip.

Claim 59. (Previously Presented) The syringe of claim 58, wherein said retainers at said front end of said mixing tip comprises a recess in the wall of said mixing tip, and said retainer at the outlet tip comprises a projection at the circumference of the rear end of said outlet tip, said projection being engagable by said recess.

Claim 60. (Previously Presented) The syringe of claim 59, wherein said mixing tip forms an extension of a first of said compartments of said cartridge.

Claim 61. (Previously Presented) The syringe of claim 60, wherein said first and a second compartment are connected by a passageway being provided adjacent said first end of said cartridge.

Claim 62. (Previously Presented) The syringe of claim 61, wherein said second compartment comprises a plug sealing said second compartment against that opening of said passageway facing towards the interior of said second compartment.

Claim 63. (Previously Presented) The syringe of claim 62, wherein said static mixer comprises at its rear end a plug sealing said first compartment against that opening of said passageway facing towards the interior of said first compartment.

Claim 64. (Previously Presented) The syringe of claim 63, wherein activation of said syringe by said plunger moves said plugs along the longitudinal direction of said syringe in order to free said passageway so that material is allowed to flow from said compartments into said mixing tip.

Claim 65. (Withdrawn) Unit-dose syringe for a multi-component material, comprising:
a cartridge having a first end and a second end, and having a compartment for each component,
a mixing tip being connectable with said cartridge at its first end and receiving a static mixer,
and
a plunger for dispensing material from said cartridge through said mixing tip, said plunger being arranged at said second end of said cartridge,
(wherein said cartridge comprises a recess at its first end in longitudinal direction for receiving the rear end of said mixing tip, and
wherein said cartridge comprises radial opening in the wall of said recess providing passageways from said compartments to said recess.)

Claim 66. (Withdrawn) The syringe of claim 65, wherein said mixing tip comprises radial openings that correspond to said radial openings in said recess wall to provide passageways from said compartments into said mixing tip.

Claim 67. (Withdrawn) The syringe of claim 66, wherein said static mixer comprises a spacer at the rear end of a mixing helix, said spacer extending along the longitudinal axis of said static mixer.

Claim 68. (Withdrawn) The syringe of claim 67, wherein said static mixer comprises a closure element at the rear end of said spacer.

Claim 69. (Withdrawn) The syringe of claim 68, wherein said spacer extends in a longitudinal direction along the width of said passageways at said rear end of said mixing tip such that the closure element is located rearwards of said passageway openings.

Claim 70. (Withdrawn) Unit-dose syringe for a multi-component material, comprising a cartridge having a first end and a second end, and having a compartment for each component, said compartments extending between said first end and said second end; a static mixer being integrally formed with said cartridge at said first end; a plunger for dispensing material from said cartridge, said plunger being arranged at said second end of said cartridge; and a mixing tip connectable to said cartridge at said first end of said cartridge and receiving said static mixer.

Claim 71. (Withdrawn) The syringe of claim 70, wherein each compartment of said cartridge comprises outlet openings at the first end of said cartridge.

Claim 72 (Withdrawn). The syringe of claim 71 wherein said outlet openings of said compartments are directed along the longitudinal axis of said syringe.

Claim 73. (Withdrawn) The syringe of claim 72, wherein said mixing tip comprises an axially acting rotary slide valve at its end being connectable to said first end of said cartridge.

Claim 74. (Withdrawn) The syringe of claim 73, wherein said axially acting rotary slide valve comprises passageways and seal areas that are alternately alignable with said outlet openings of said cartridge compartments.

Claim 75. (Withdrawn) The syringe of claim 74, wherein said valve comprises a locking mechanism being engageable with a corresponding locking mechanism at said first end of said cartridge.

Claim 76. (Withdrawn) The syringe of claim 75, wherein said locking mechanism at said cartridge comprises pins that are engageable in corresponding recesses forming said locking mechanism of said valve.

Claim 77. (Withdrawn) The syringe of claim 76, wherein said pins and said recesses are formed such that a thread lock is obtained interlocking said mixing tip and said cartridge in longitudinal direction of said syringe.

Claim 78. (Withdrawn) The syringe of claim 77, wherein said outlet openings of said compartments are directed transverse to the longitudinal axis of said syringe.

Claim 79. (Withdrawn) The syringe of claim 78, wherein said mixing tip comprises a radially acting rotary slide valve at its end being connectable to said first end of said cartridge.

Claim 80. (Withdrawn) The syringe of claim 79, wherein said radially acting rotary slide valve comprises a body member forming a cavity that corresponds to the outer surface of said cartridge in the area of its first end for receiving said first end of said cartridge.

Claim 81. (Withdrawn) The syringe of claim 80, wherein said wall of said cavity comprises recesses along the longitudinal axis of said body member, said recesses being alignable with said outlet openings of said cartridge for forming passageways from said compartments of said cartridge to said static mixer.

Claim 82. (Previously Presented) The syringe of any of claims 51, 65, 70, or 85, wherein said cartridge comprises at its outer surface extensions or protrusions being sized and shaped to provide said cartridge with a substantially circular circumferential outer surface.

Claim 83. (Previously Presented) The syringe of any of claims 51, 65, 70, or 85, wherein said compartments are arranged concentrically.

Claim 84. (Previously Presented) The syringe of any of claims 51, 65, 70, or 85, wherein said cartridge is made from a thermoplastic elastomer.

Claim 85. (Withdrawn) Unit-dose syringe for a multi-component material, comprising a cartridge having a first end and a second end, and having at least a first compartment for a first component and a second compartment for a second component, said compartments extending between said first end and said second end;
a plunger for dispensing material from said cartridge, said plunger being arranged at said second end of said cartridge; and
a mixing tip connectable to said cartridge at said first end of said cartridge and receiving a static mixer.

wherein said first compartment is connectable to said second compartment by a first passageway, and said second compartment is connectable to said mixing tip by a second passageway.

Claim 86. (Withdrawn) The syringe of claim 85, wherein a first compartment of said cartridge comprises said first passageway at said first end of said cartridge.

Claim 87. (Withdrawn) The syringe of claim 86, wherein said first compartment and a second compartment are rotatable relative to each other.

Claim 88. (Withdrawn) The syringe of claim 87, wherein the wall of said first compartment comprises a first channel being inclined with regard to the longitudinal axis of the syringe, and wherein the wall of said second compartment comprises a second channel being inclined with regard to the longitudinal axis of said syringe, and wherein rotational movement of said first compartment relative to said second compartment brings said first inclined channel and said second inclined channel into alignment to provide a passageway from said first to said second compartment.

Claim 89. (Previously Presented) The syringe of any of claims 51, 65, 70, or 85, being pre-filled with a multi-component dental material.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.